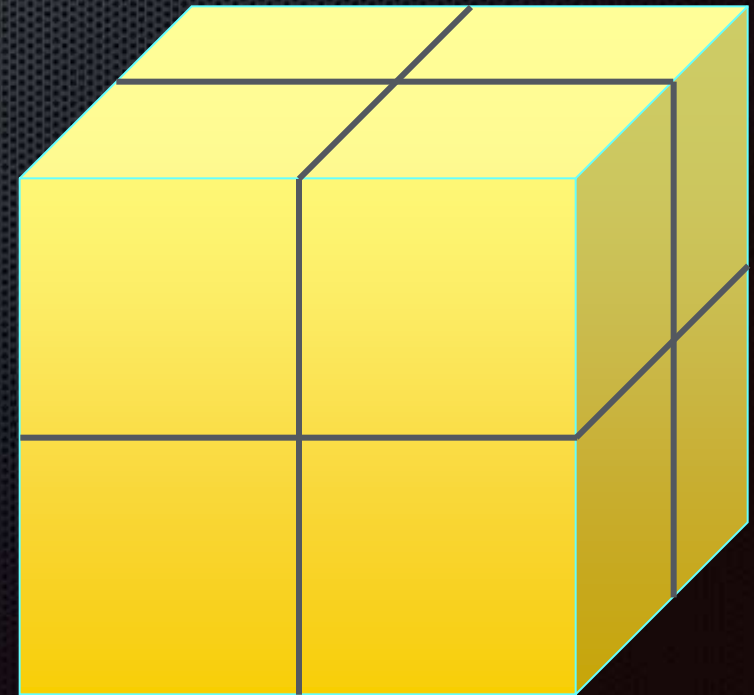
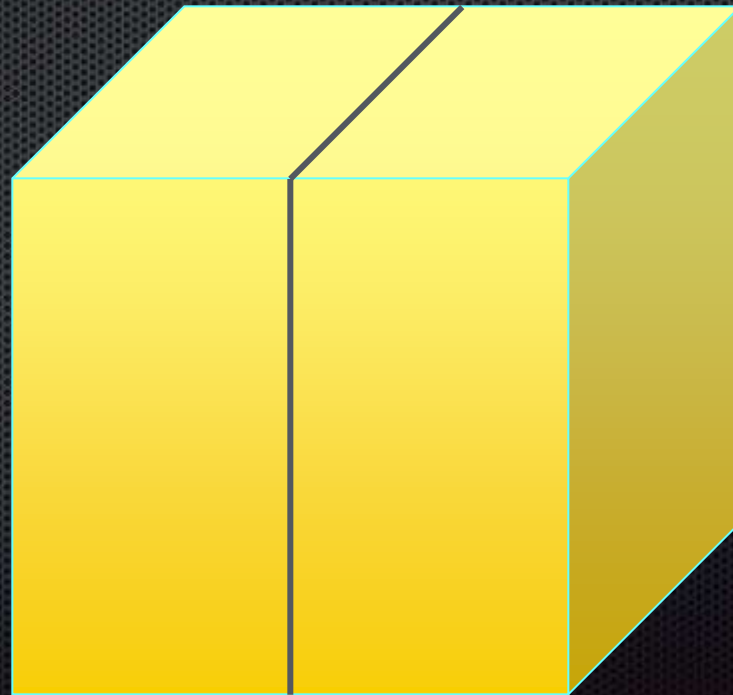
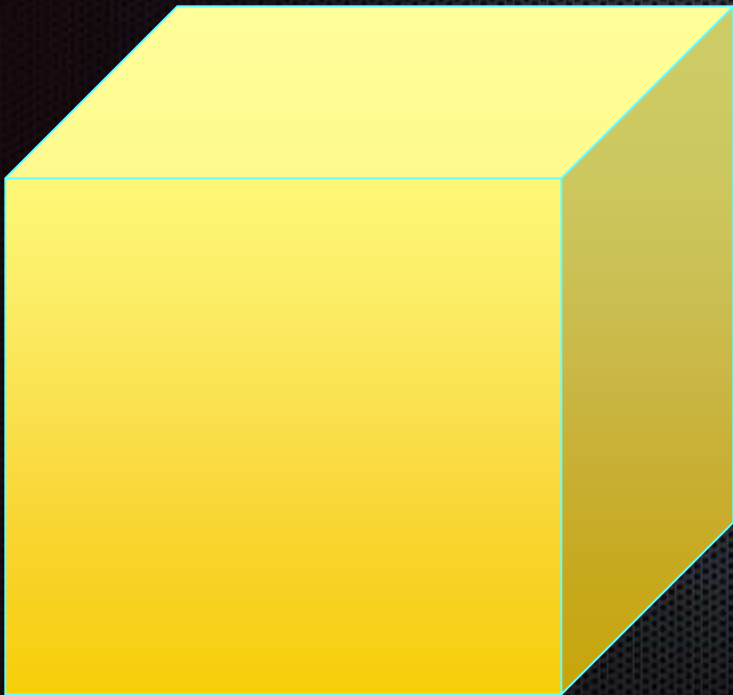


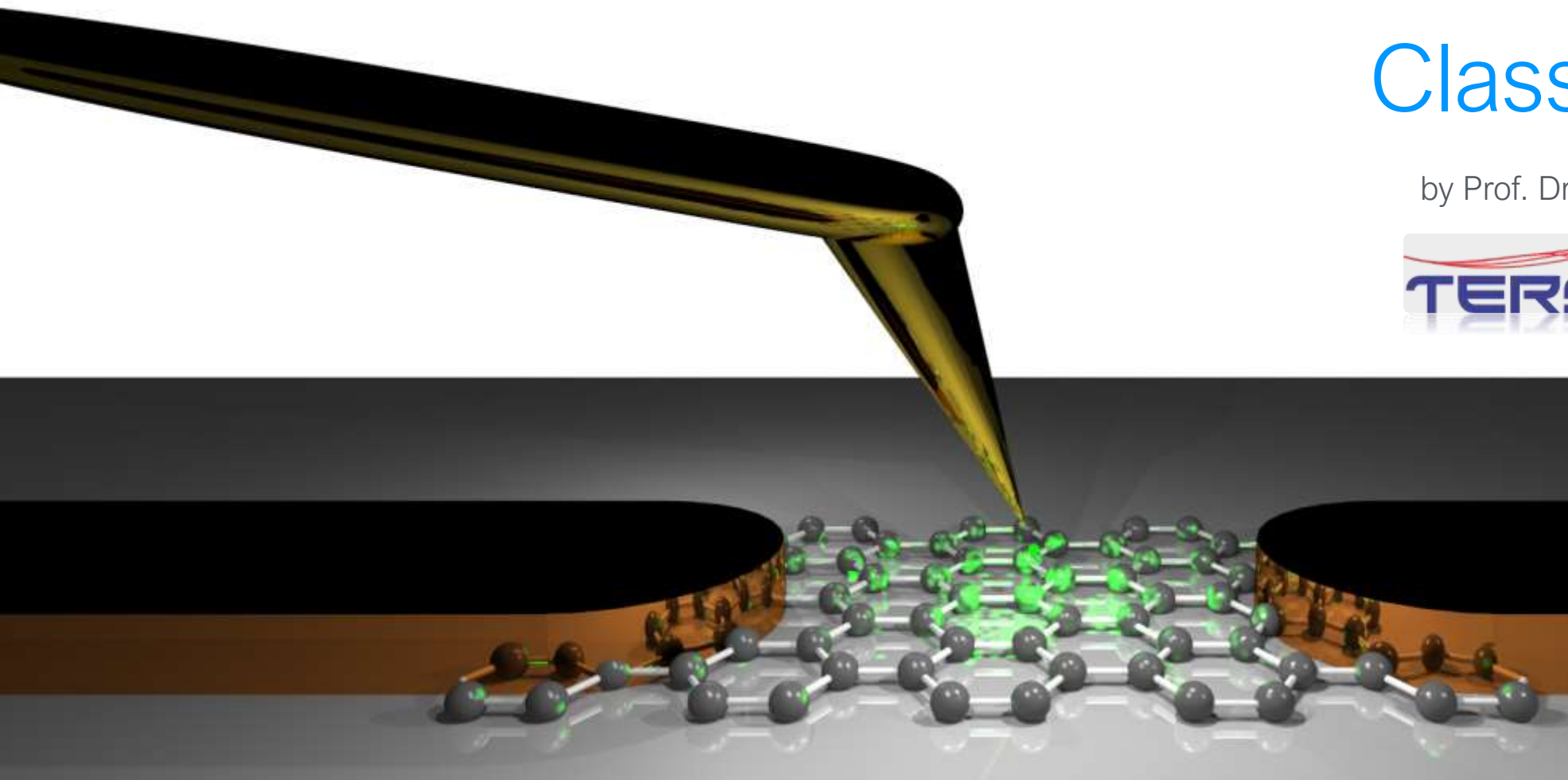
# Surface/volume ratio



# Professional English

Class 9DM8I

by Prof. Dr. Raul D. Rodriguez



What's that? What for?

# Evaluation

Assessment	Number	Points
Tests	4	20
Seminars	6	30
Presentation	1	10
<b>Total</b>		<b>60</b>



# Structure of the course

Section 1. Nanomaterials

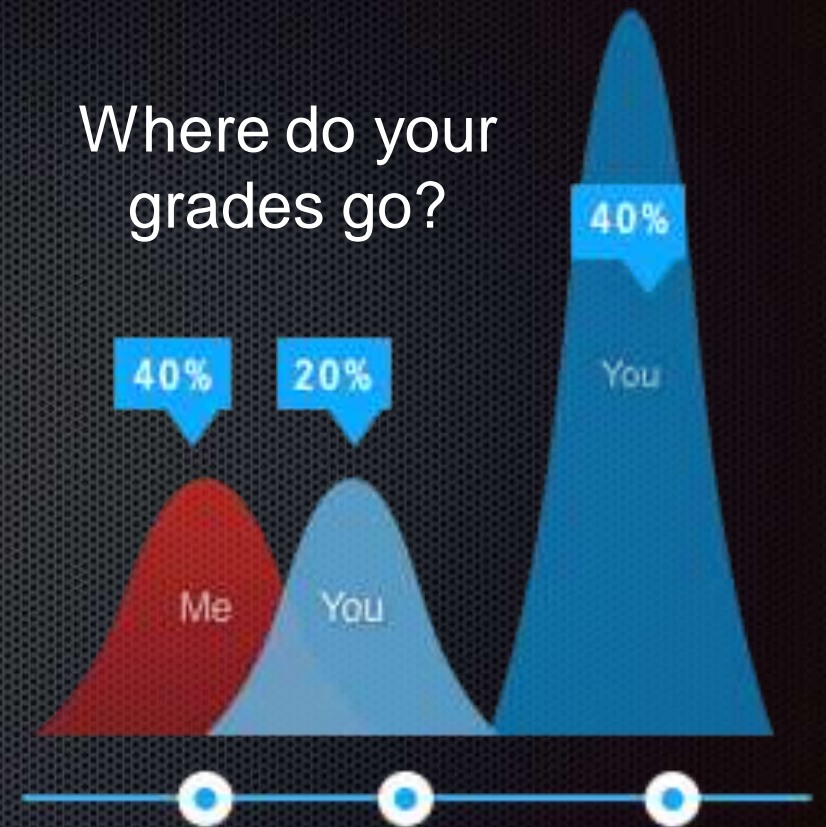
Section 2. How to make them

Section 3. How to study them

Section 4. Applications of nanomaterials

## How to play being a scientist

Where do your grades go?



**For consultation**

**Mornings, after making an appointment**

Science Park room 313

raulmet@gmail.com

## Objectives of this course:

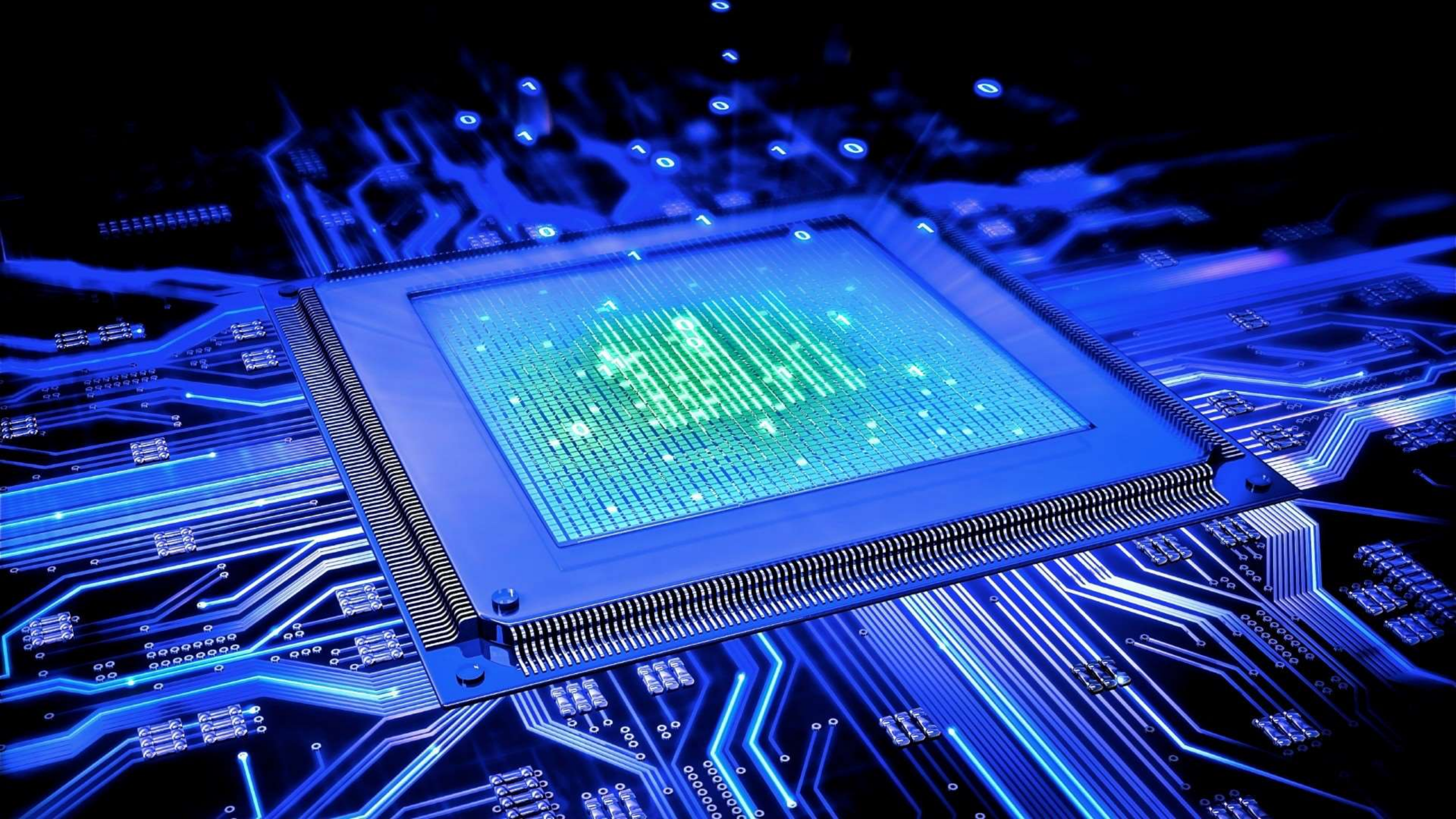
- ✓ To show you and help you learn a successful way to conduct scientific research.
- ✓ To understand the principles of nanotechnology
- ✓ Improve your confidence when communicating in English



1. Nanomaterials
2. How to make them
3. How to study them
4. Applications

# Technological Revolution



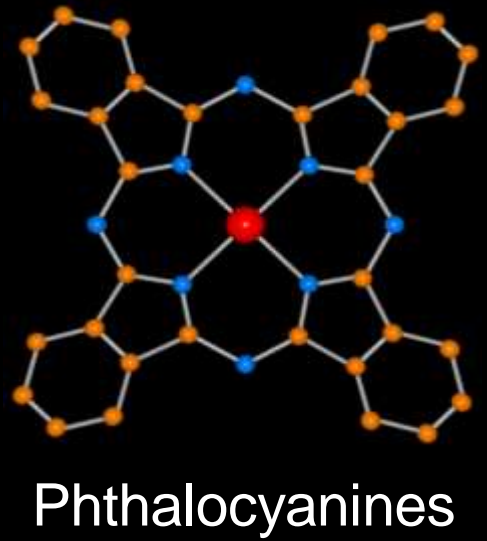
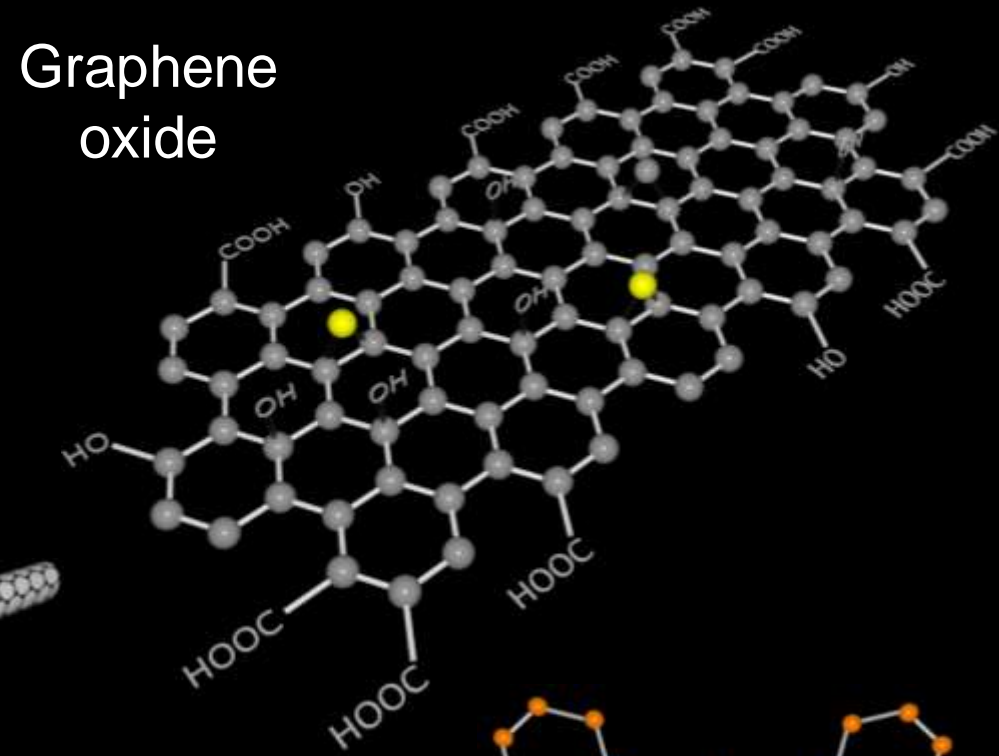
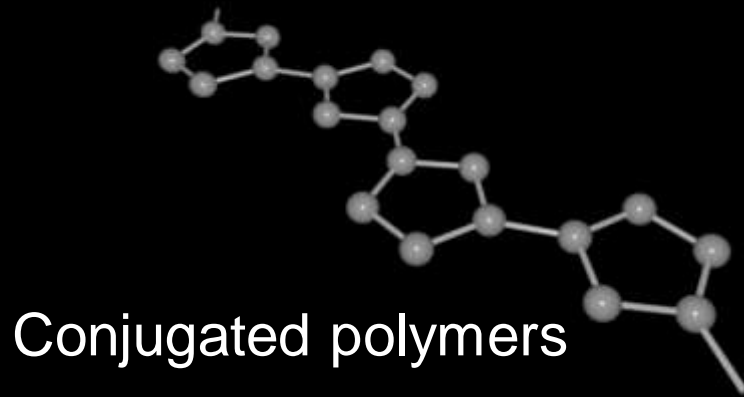
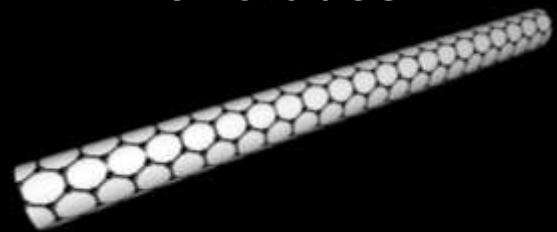
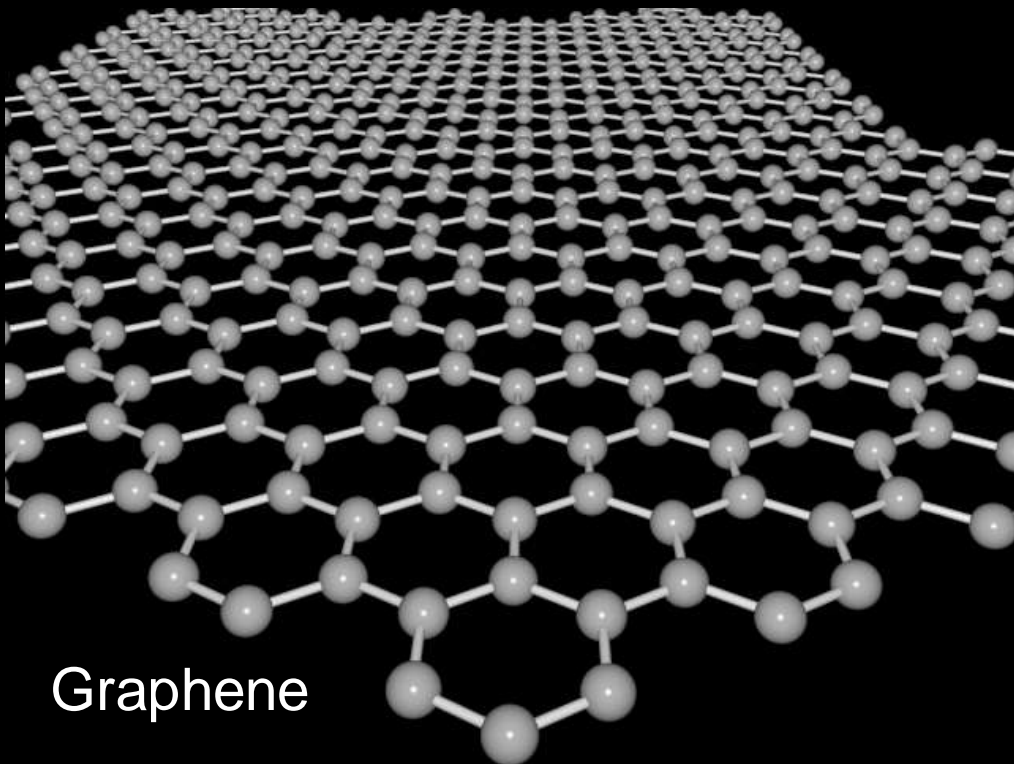




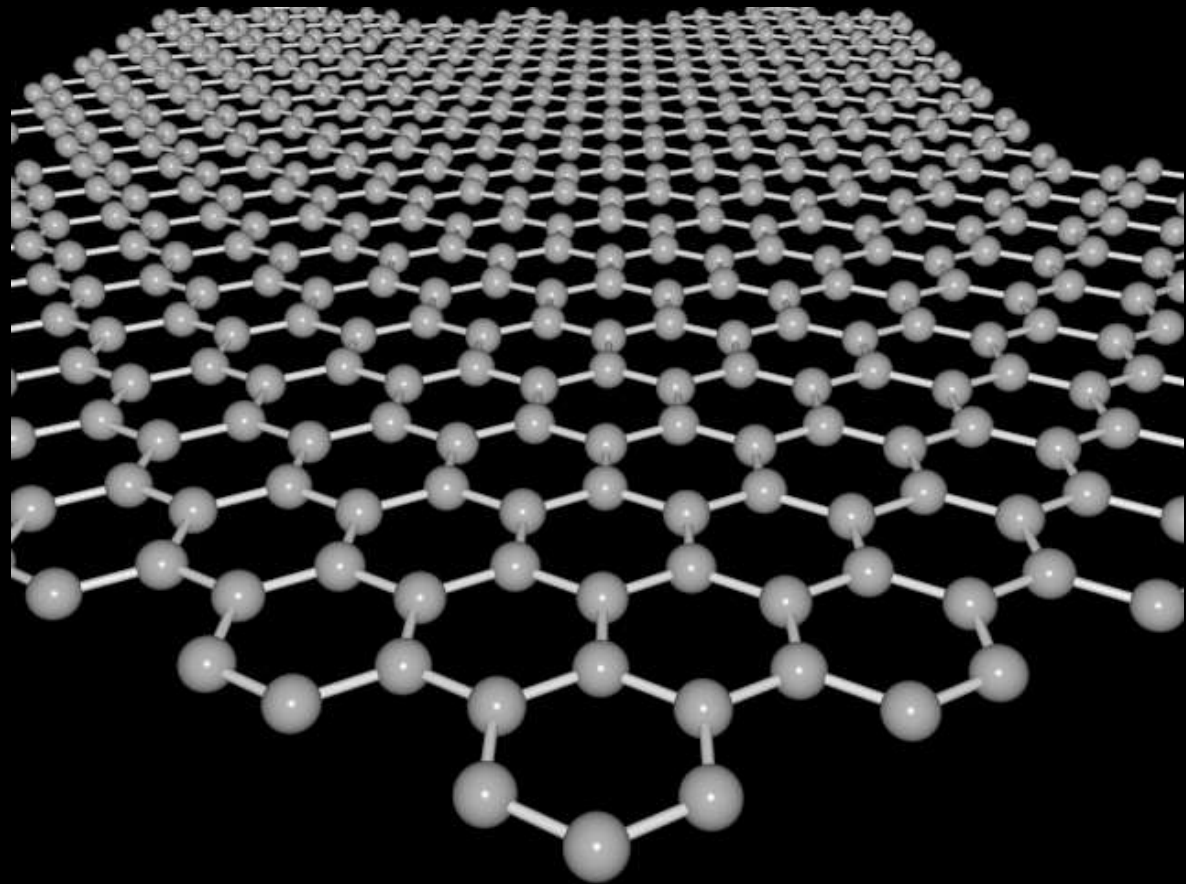
Faster, cheaper, better

...smaller

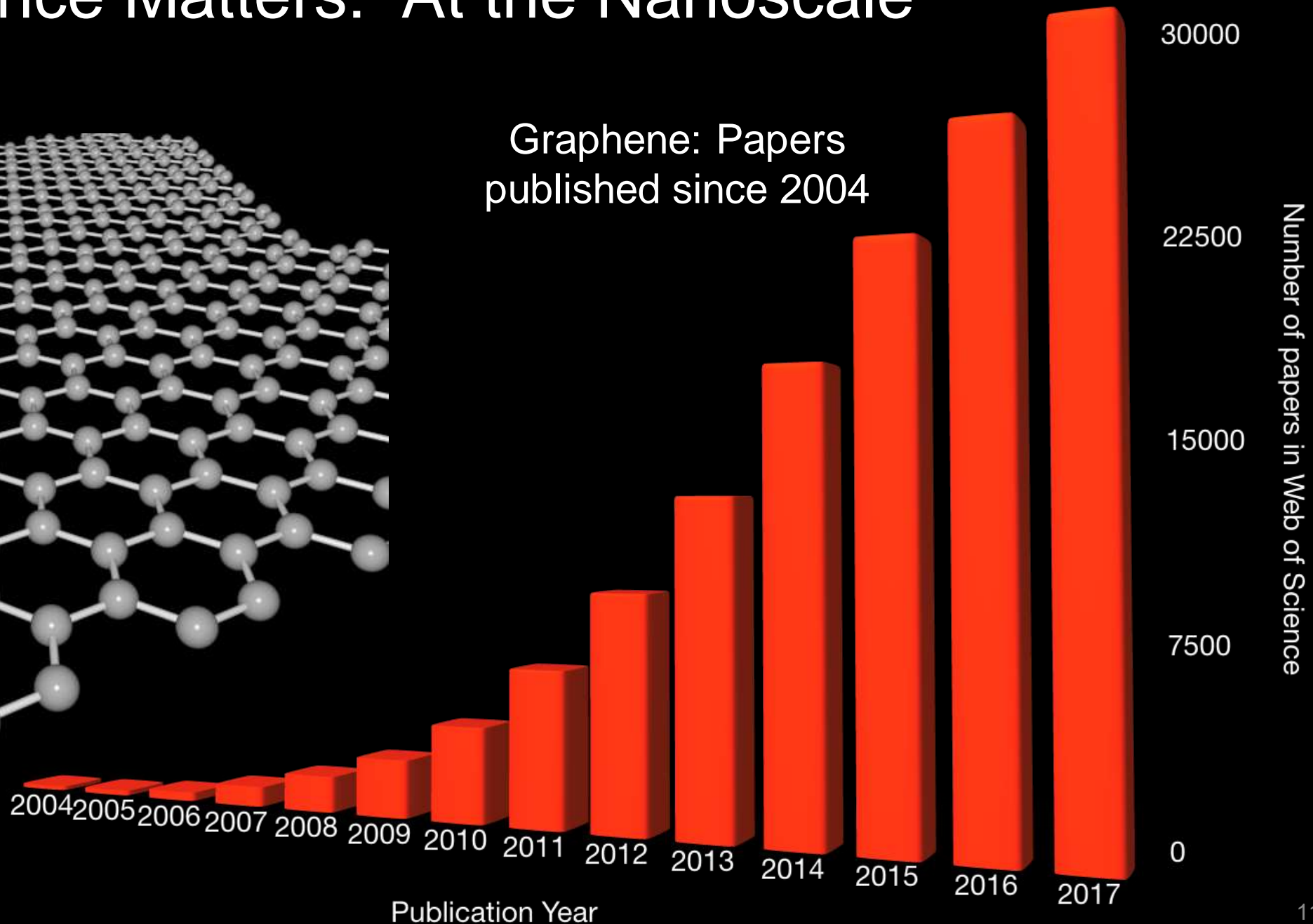
# Carbon based nanomaterials



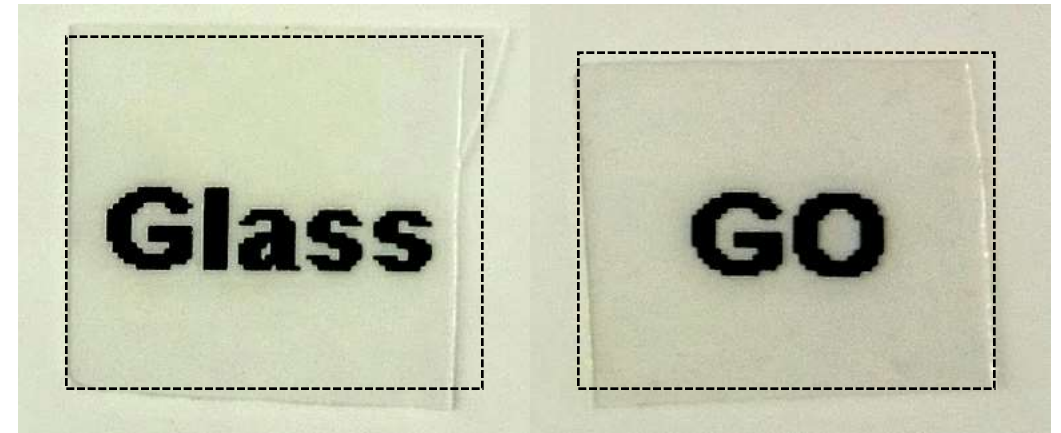
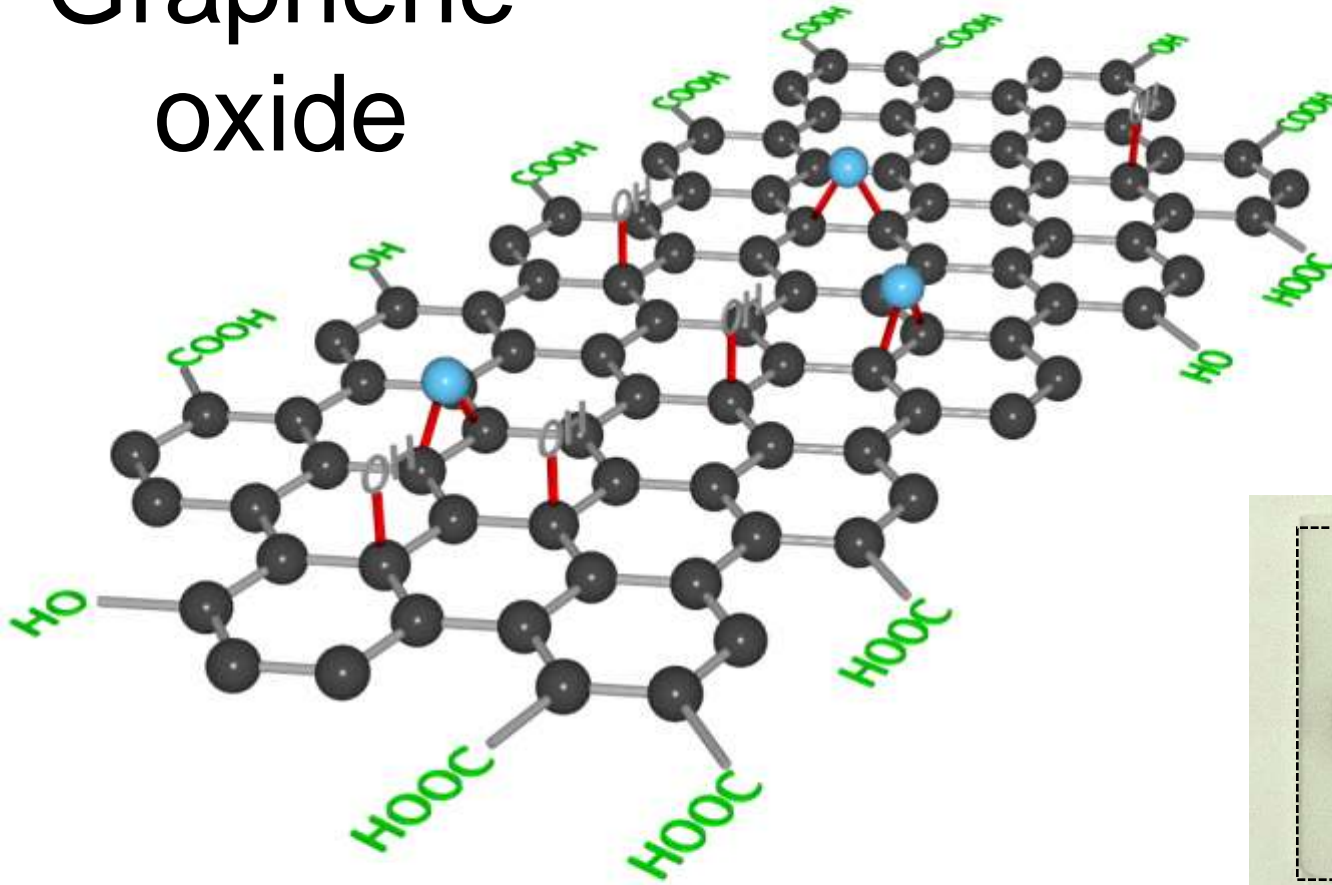
# Materials Science Matters: At the Nanoscale

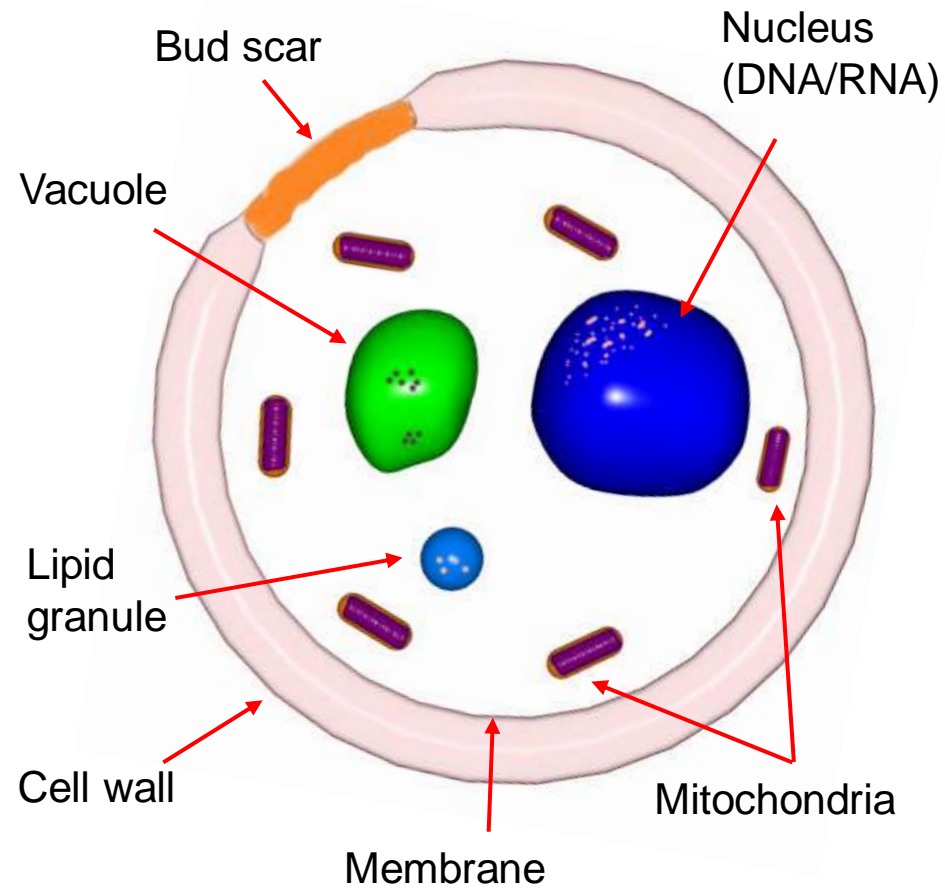


Graphene: Papers published since 2004

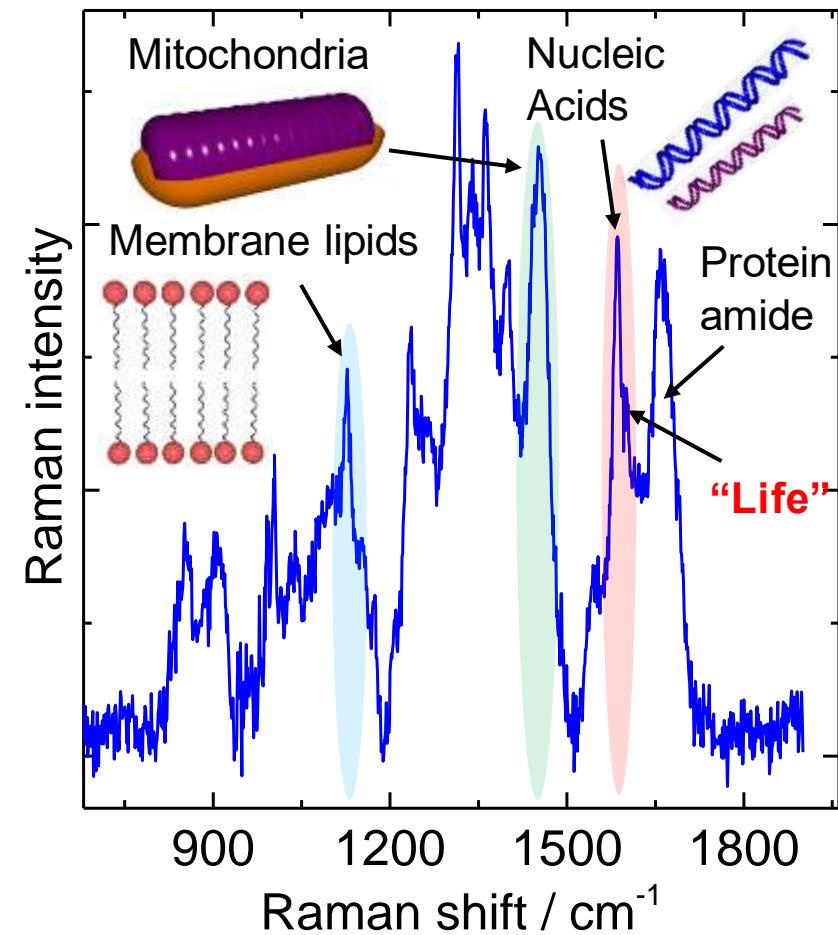


## Graphene oxide

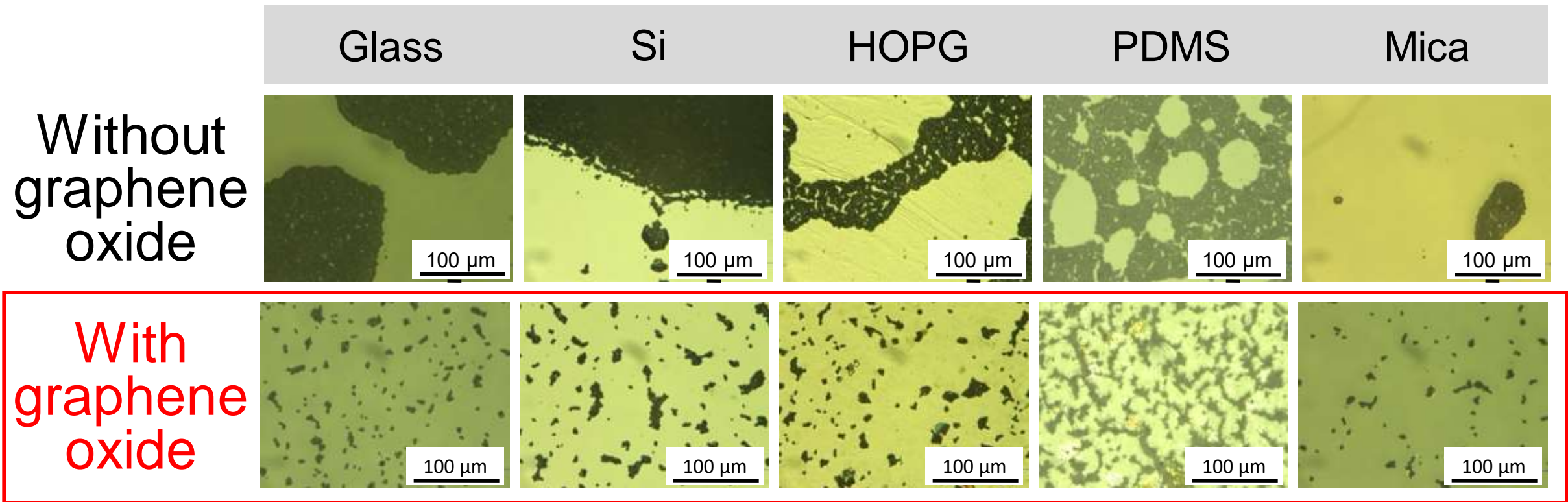


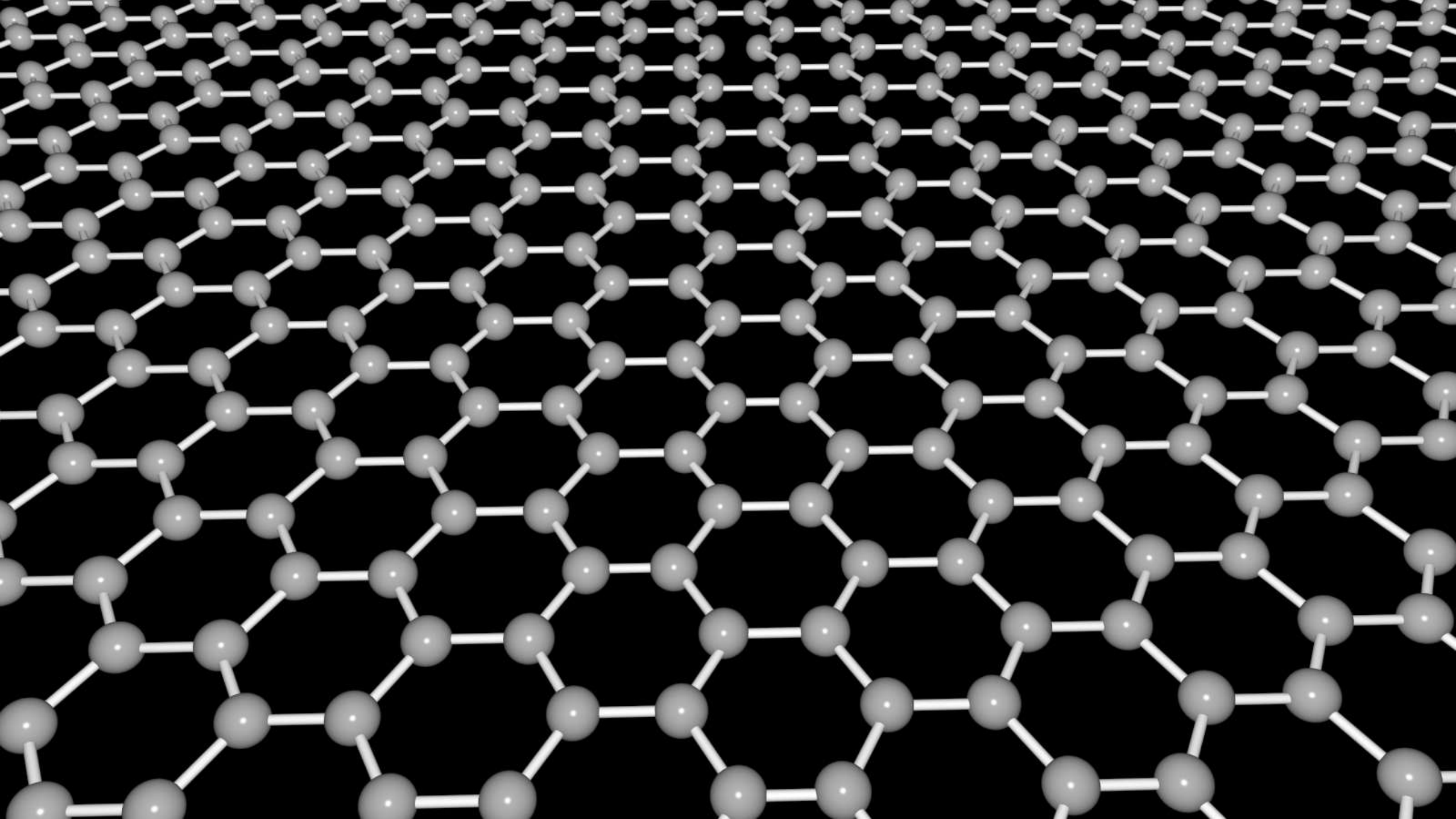


## Raman spectroscopy

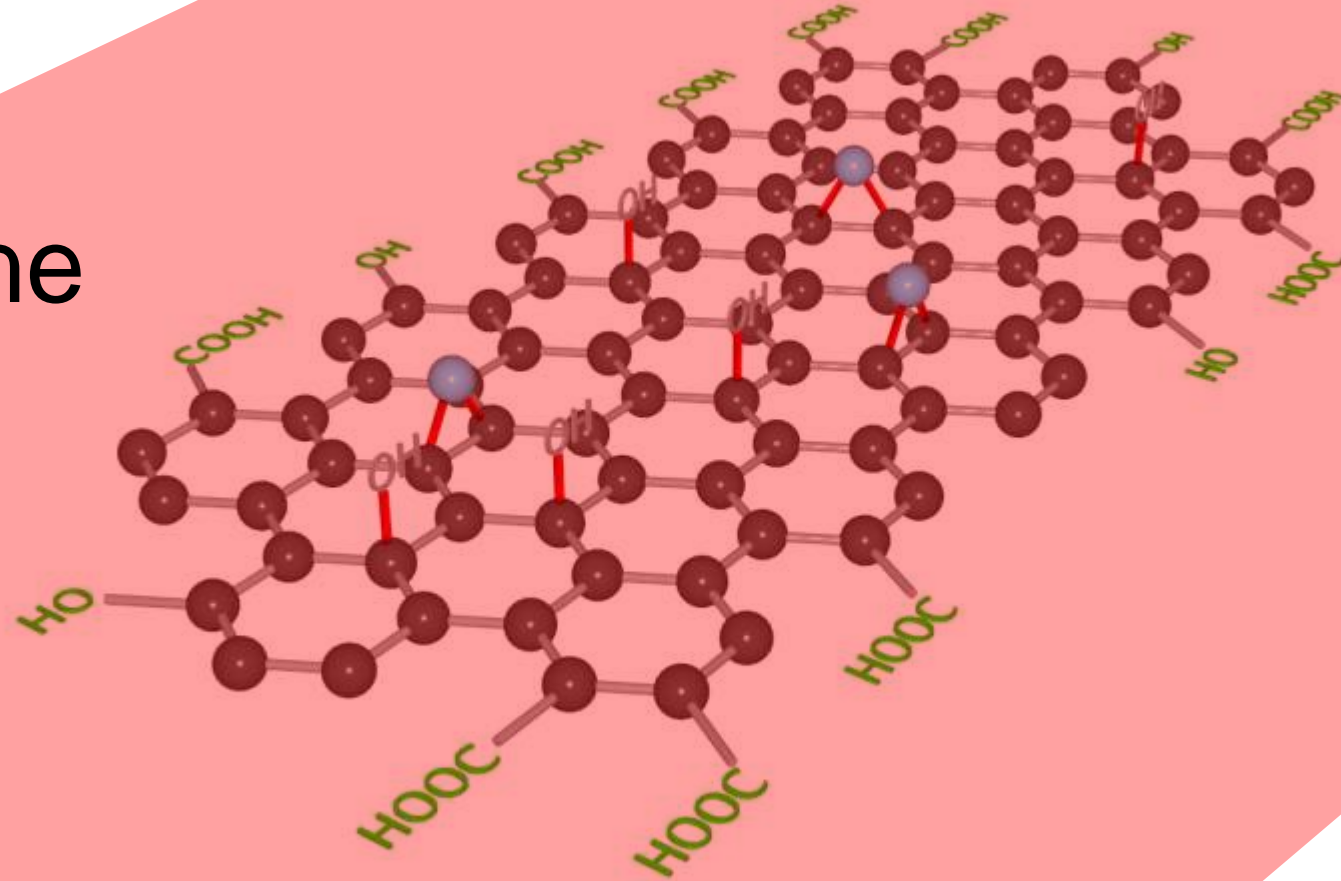


## Graphene oxide allows to control the cell colony size and aggregation of *any surface*



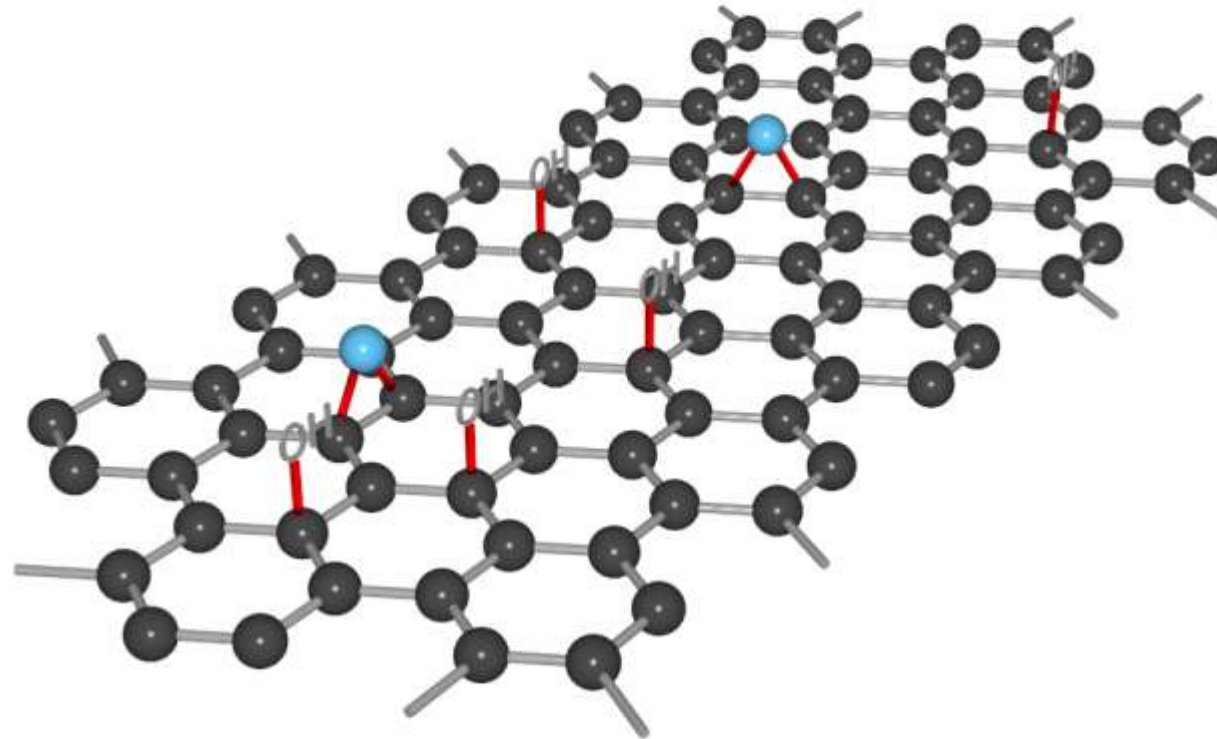


Graphene oxide

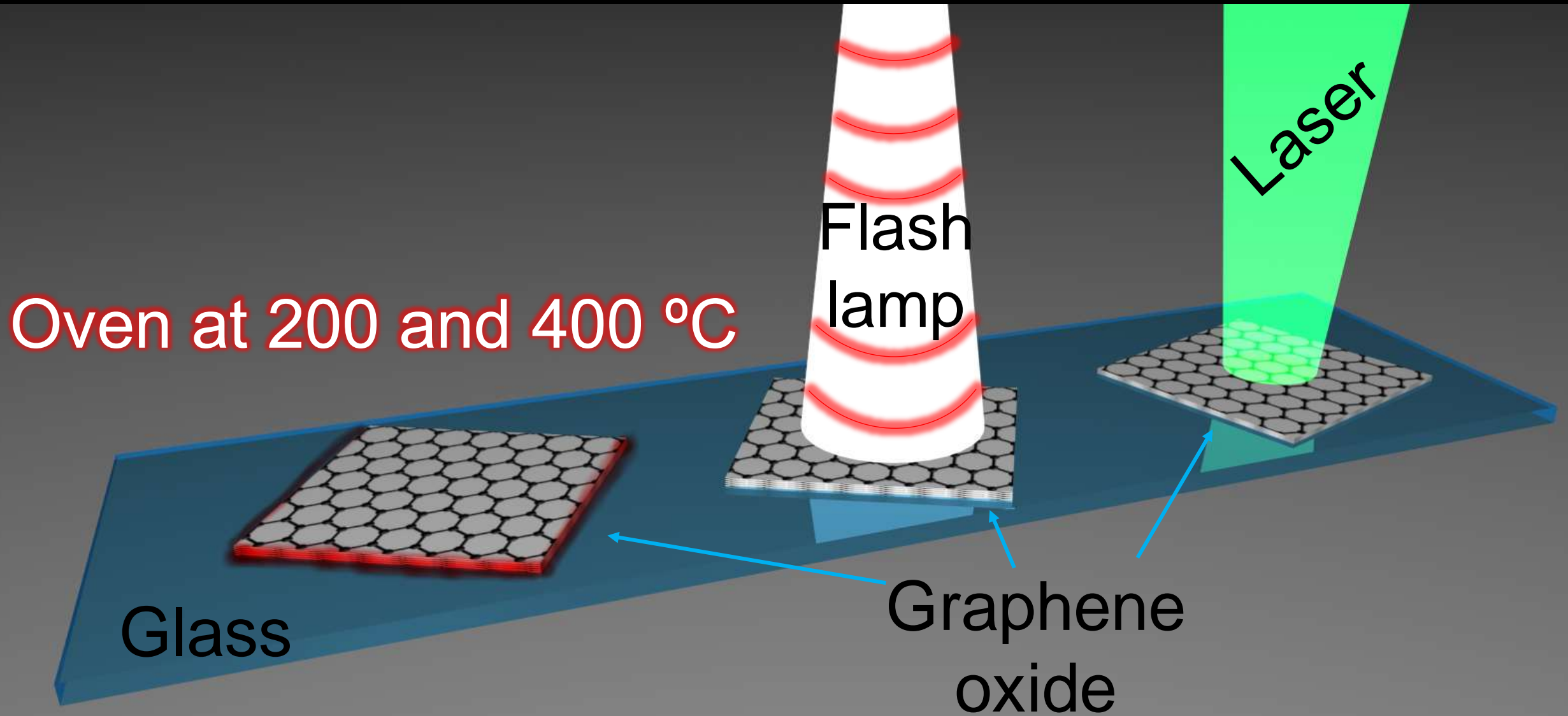


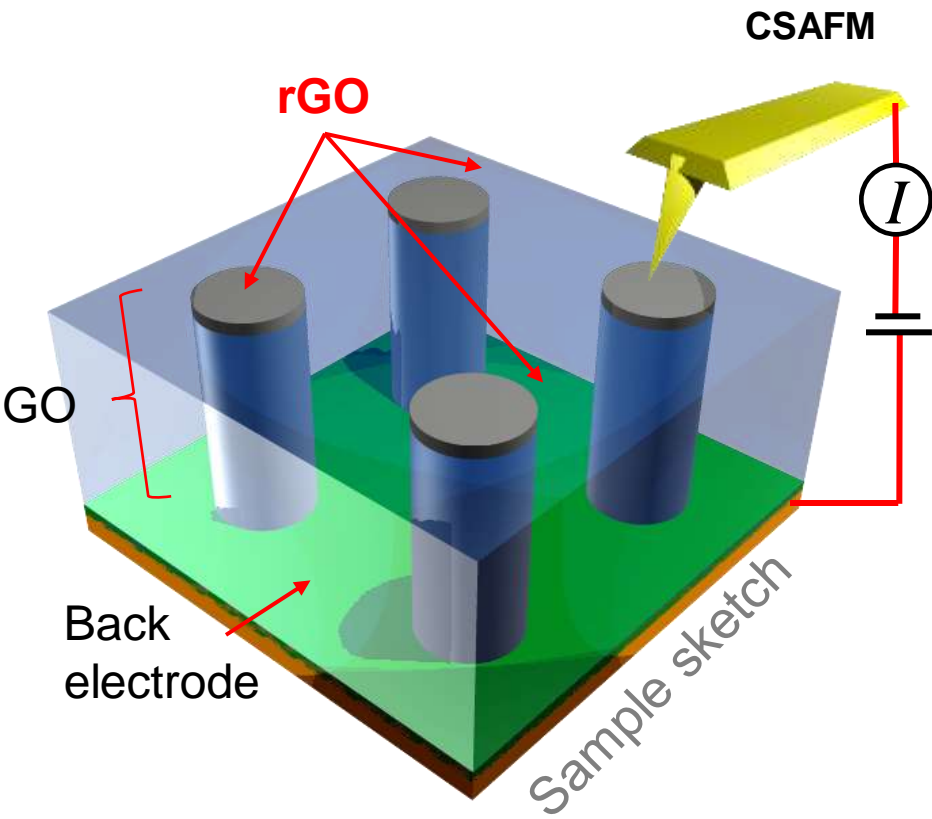


**Reduced**  
Graphene  
oxide

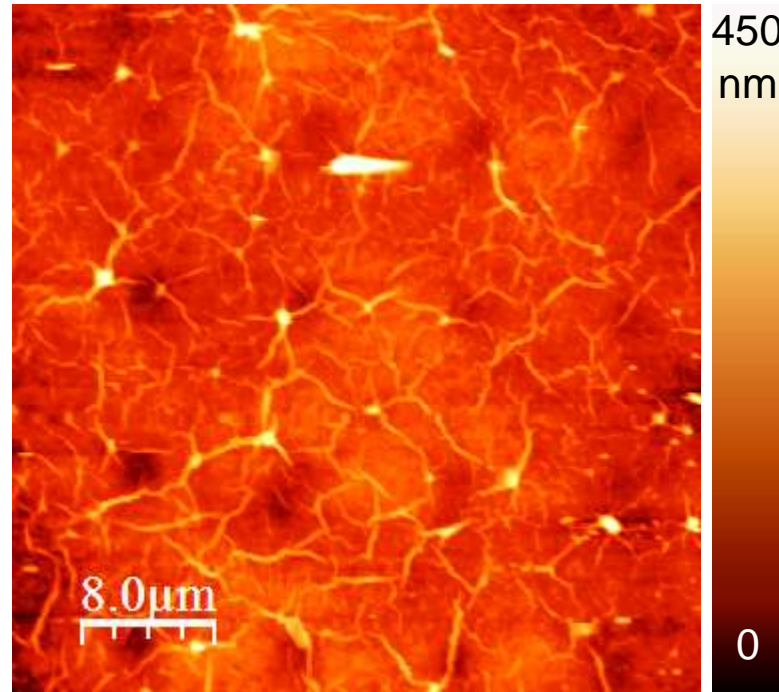


# Usual methods to reduce GO

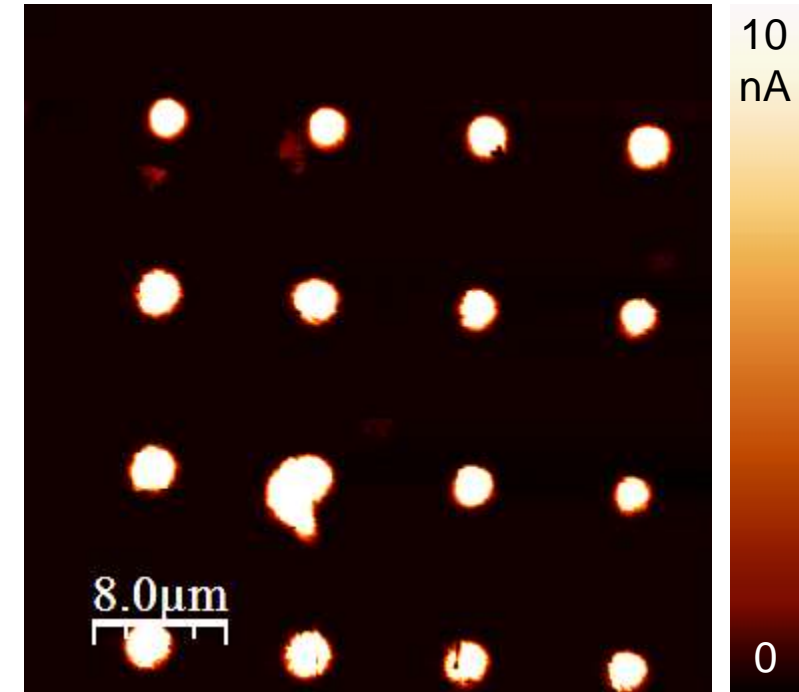




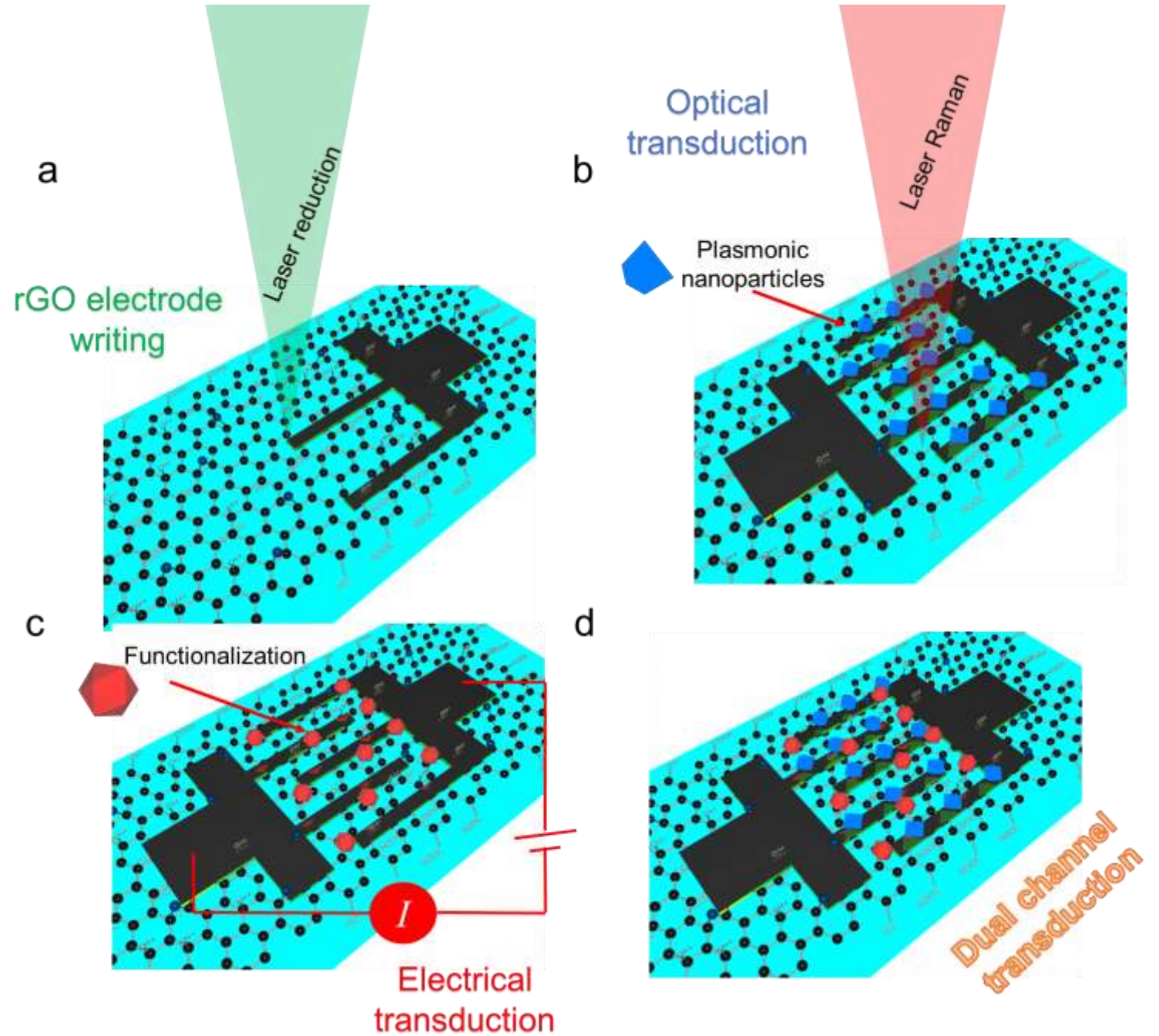
### Topography



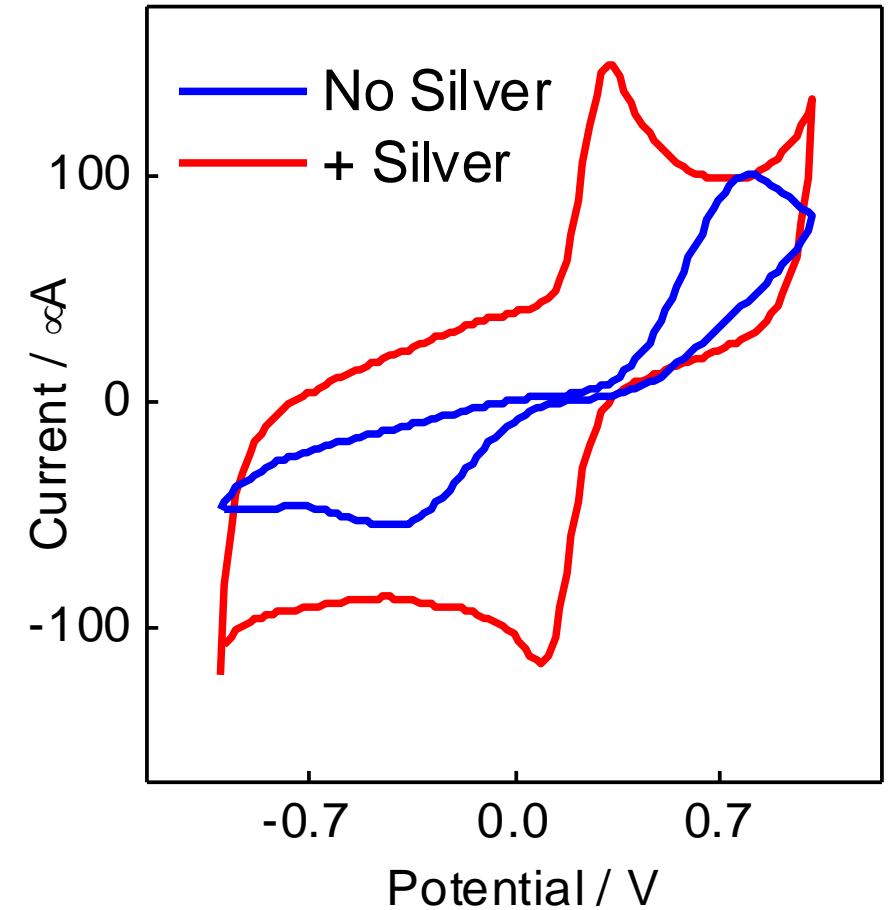
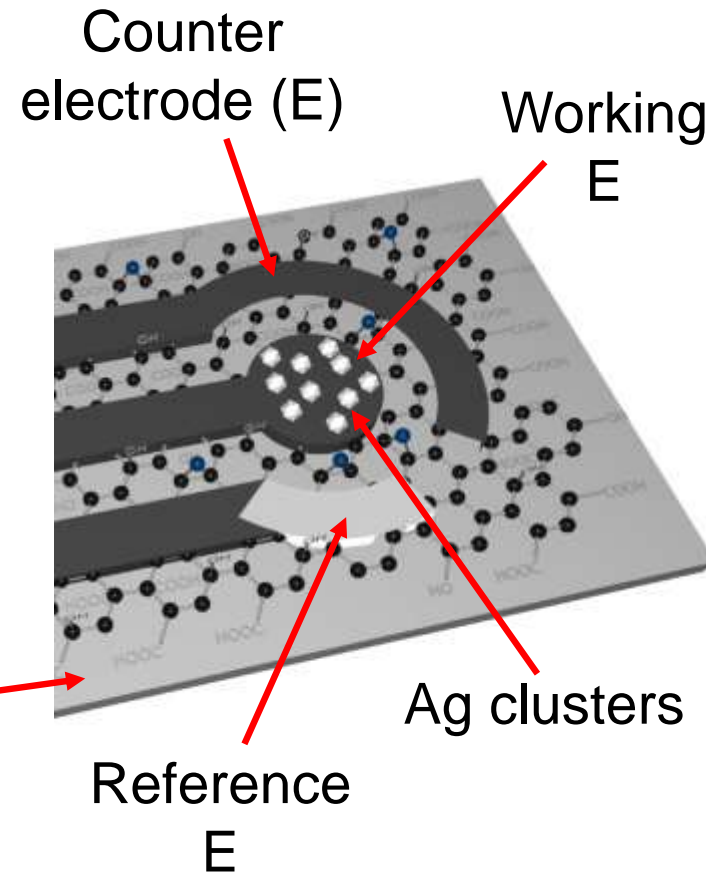
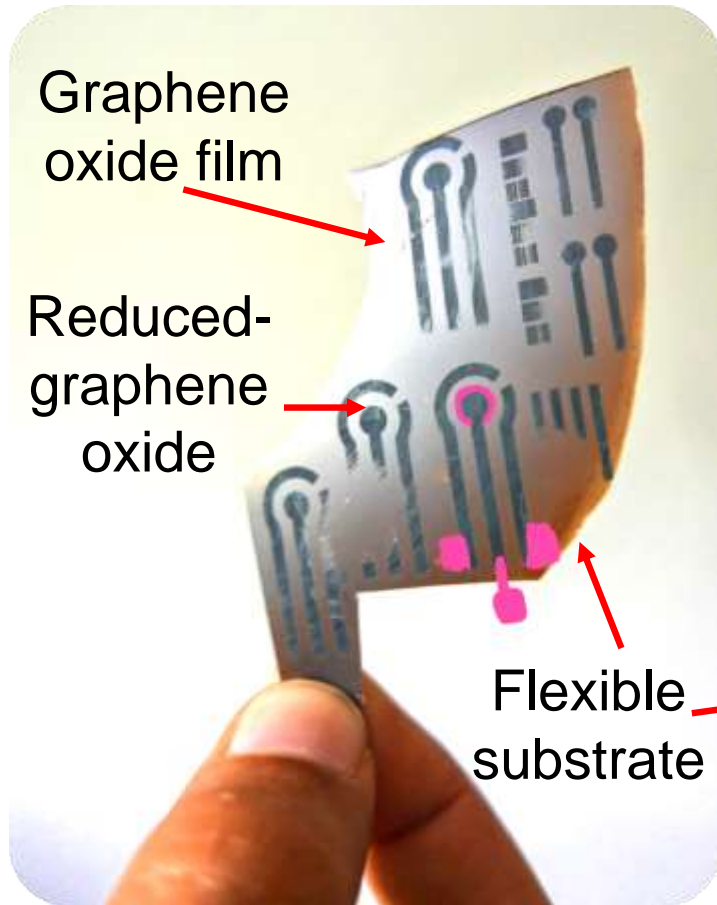
### Current



# Ultrasensitive sensing

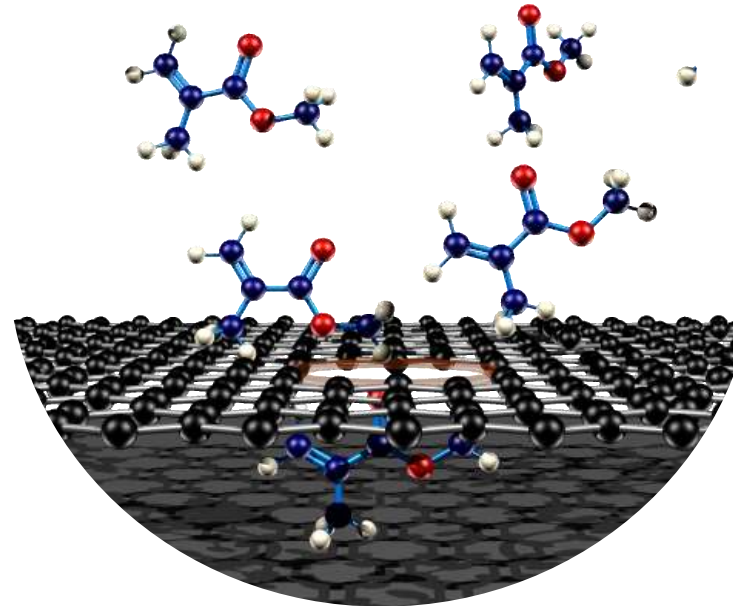


# Proof of principle

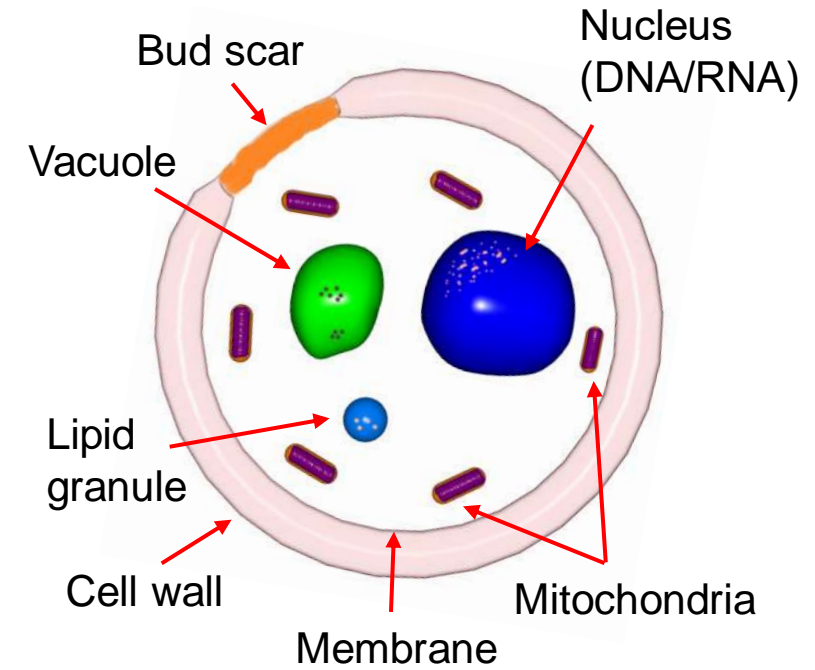




## 1) Graphene-based nanomaterials



## 2) Biomedical applications



[www.ters-team.com](http://www.ters-team.com)

## 3) Advanced nano-electronics

